PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 6013-150PCT	FOR FURTHER AC	TION	See Form PCT/IPEA/416	
International application No. PCT/CA2005/000261	International filing dat 23 February 2005 (2	te (day/month/year) 23-02-2005)	Priority date (day/month/year) 23 February 2004 (23-02-2004)	
International Patent Classification (IPC: C08J 5/22 (2006.01), C0	IPC) or national classification 8 <i>J</i> 3/24 (2006.01), <i>H01M</i>	and IPC 8/10 (2006.01), H01M	1 2/16 (2006.01)	
Applicant UNIVERSITE LAVAL ET	AL			
This report is the international punder Article 35 and transmitted	reliminary examination report I to the applicant according to	, established by this Intern Article 36.	ational Preliminary Examining Authority	
2. This REPORT consists of a total	of 5 sheets, includi	ing this cover sheet.		
3. This report is also accompanied	by ANNEXES, comprising:			
_	ant and to the International Bi	ureau) a total of 24	sheets, as follows:	
[X] sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).				
goes bevo	nich supersede earlier sheets, be ond the disclosure in the internupplemental Box.	ut which this Authority co ational application as filed	nsiders contain an amendment that I, as indicated in item 4 of Box No. 1	
	ational Bureau only) a total of , containing a cated in the Supplemental Box	sequence listing and/or ta	r of electronic carrier(s)) bles related thereto, in electronic ting (see Section 802 of the Administrative	
4. This report contains indications	relating to the following item	s:		
[X] Box No. I Basis of the report				
[X] Box No. II Priority			1: Annual annual achilites	
[]Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability				
[]Box No. IV Lack of unity of invention				
[X]Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement			rventive step of industrial approximation,	
	and explanations supporting s locuments cited	uch statement		
[] DON'T (OF) I	lefects in the international app	lication		
[X]Box No. VII Certain detects in the international application				
Date of submission of the demand 22 December 2005 (22-12-2005)		10 March 2006 (10-03-2	2006)	
Name and mailing address of the	PEA/CA	Authorized officer		
Canadian Intellectual Property Office Place du Portage I, C114 - 1st Floor, Box PCT 50 Victoria Street Gatineau, Quebec K1A 0C9 Facsimile No.: 001(819)953-2476		Reese A	. Adeney (819) 997-2852	

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International application No. PCT/CA2005/000261

Вох	No. 1	I Basis of the r	report		
1.	Witl	h regard to the lan	nguage, this report is b	ased on:	
	[X] the international application in the language in which it was filed				
	г 1		the international applic		, which is the language of a
	L J		ished for the purposes	·	
			nal search (Rules 12.3)		
				application (Rule 12.4(a))	
		[] internation	nal preliminary examir	nation (Rules 55.2(a) and/or 55.3(a))	
2.	the .	th regard to the ele receiving Office in exed to this report	n response to an invita	onal application, this report is based on (repi tion under Article 14 are referred to in this	lacement sheets which have been furnished to report as "originally filed" and are not
	[]	the international	l application as origina	ally filed/furnished	
	[X]	the description:			
		[] pages		11 - dii Andradia	as originally filed/furnished 27 February 2006
		[X] pages*	1-19	received by this Authority on	27 February 2000
	r 37 1	[] pages*		received by this Authority on	
	[X]	the claims:			as originally filed/furnished
		[] pages [] pages*		as amended (together with	any statement) under Article 19
		[X] pages*	20-24	received by this Authority on	27 February 2006
		pages*		received by this Authority on	
	[X]	the drawings:		•	
		[X] pages	1-4	•	as originally filed/furnished
		[] pages*		received by this Authority on	
		[] pages*		received by this Authority on	
	[]	a sequence listing	ing and/or any related t	able(s) - see Supplemental Box Relating to S	Sequence Listing.
3.	[]	The amendment	its have resulted in the	cancellation of:	
			ription, pages	ţ	
		[] the claim			
			ings, sheets/figs		
			ence listing (specify):	listing (angelfe):	
		[] any table	e(s) related to sequence	ansting (specify).	
				•	
4.	[]	This report has since they have	s been established as if e been considered to go	(some of) the amendments annexed to this re beyond the disclosure as filed, as indicated	eport and listed below had not been made, in the Supplemental Box (Rule 70.2(c)).
		[] the descr	ription, pages	,	
		[] the claim			
			ings, sheets/figs		
			ence listing (specify):		
		[] any table	e(s) related to sequence	e listing (specify):	
		<u>.</u>	n 62	1 1 4 1 . 1 . 2	
*	If ite	em 4 applies, som	ne or all of those sheets	may be marked "superseded."	

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Box No. II	Priority		
	is report has been established as if no priority had been claimed due to the failure to furnish within the prescribed time it the requested:		
Ţ	copy of the earlier application whose priority has been claimed (Rule 66.7(a)).		
[] translation of the earlier application whose priority has been claimed (Rule 66.7(b)).		
fou	is report has been established as if no priority had been claimed due to the fact that the priority claim has been and invalid (Rule 64.1). Thus for the purposes of this report, the international filing date indicated above is a sidered to be the relevant date.		
3. Additional	observations, if necessary:		
The validity of the priority claims has been considered. The Authority does have in its possession a copy of the earliest filed application whose priority has been claimed. The claimed priority date is considered valid.			
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Box No. V	Reasoned statement under	Article 35(2) with regard to novelty,	, inventive step or industrial
	applicability: citations and	d explanations supporting such state	ment

1. Statement			
Novelty (N)	Claims	1-36	YES
	Claims	none	NO
Inventive step (IS)	Claims	1-36	YES
	Claims	none	NO
Industrial applicability (IA)	Claims	1-36	YES
	Claims	none	NO

2. Citations and explanations (Rule 70.7)

D1: CA 2,343,184 (VICTREX) 23 March 2000

D1 discloses a method for the preparation of proton exchange membranes, based on cross-linked sulfonated poly (ether ether ketones), the cross-linking performed by thermally activating bridges of the polymer chains with polyatomic alcohols, which makes the polymer mechanically stronger and reduces its swelling by water. dry SPEEK polymer was dissolved in a solvent (water-acetone or water-alcohol mixtures), various amounts of the crosslinker were added, and after agitation, the solution was cast to obtain the membrane.

Novelty (N):

The subject matter of claims 1-36 is novel and thus does meet the criteria of Article 33(2) of the PCT.

The amendment to the present claims to restrict the sulfonated polymer to a degree of sulfonation greater than 0.6 and the ratio of polyol molecules per repeat unit of the sulfonated polymer higher than or equal to 1 is novel over D1.

Inventive Step (IS):

The subject matter of claims 1-36 is considered to involve an inventive step and thus does meet the criteria of Article 33(3) of the PCT. It would not be obvious to one skilled in the art to utilize the above-mentioned sulfonated polymer or the polyol cross-linking agent in the specific amounts used to produce cross-linked proton exchange membranes.

Industrial Applicability (IA):

The subject matter of claims 1-36 is industrially applicable and thus does meet the criteria of Article 33(4) of the PCT.

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Box No. VIII	Certain observations on the international application				
The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:					
The description a available to the p	The description at page 1 is objected to under PCT Article 5. All documents referred to in the description of any application must be available to the public.				
The expression "	incorporated by reference" on page 1 is objected to under PCT Article 5.				
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